Ed Gerck <egerck@safevote.com> on 01/30/2002 11:35:15 AM

To: vss@FEC, Penelope Bonsall/FEC/US@FEC
cc:

Subject: January 2002 Comment on VSS

To
Ms. Penelope Bonsall, Director
Office of Election Administration
Federal Election Commission

Dear Ms. Bonsall,

Thank you for the opportunity to participate in the public discussions regarding the new draft for the Voting System Standards (VSS). In this email I would like to summarize my observations and the recommendations by Safevote, Inc.

First, we welcome the non-inclusion of proposed guidelines for Internet voting. The proposed guidelines, as we commented, were too specific and were quickly becoming obsolete.

A public election system needs to provide key properties, including anonymity (to avoid collusion and coercion), secrecy (all votes are unknown), correctness (all votes are counted), integrity (no one can vote twice or change the vote of another), robustness (resistance to faults and attacks) and trust (as public reliance). In such a system, if we know the voter (e.g., as we must, in voter registration) we cannot know the vote and if we know the vote (e.g., as we must, in tallying) we cannot know the voter.

This set of properties presents considerable difficulties both to be implemented and to be verified, for paper, electronic and network (Internet or dial-up) voting. The traditional approach to solve this problem is characterized by a set of public guidelines, such as the VSS, that are verified for conformance by accredited testers before an election system can be used. However, we need to recognize that this is the approach that allowed the events in Florida to happen. Therefore, the motivation exists to pursue an improvement to the traditional process.

Such an improvement needs to begin by a review of the entire approach to standards in voting systems. In essence, we suggest that the standards should establish performance requirements (for evaluation) rather than specifying technical design. There are multiple arguments that support this choice, in addition to the ever increasing pace of technical obsolescence.

>From experience in several sectors, performance specifications (which describe the requirement to be met) rather than design specifications (which detail the work to be performed in meeting the requirement) are far more likely to result in a satisfactory result. A good strategy is, thus, to make the meeting of the functional requirements the vendors problem, rather than the specifiers. This also has the merit of avoiding the Trust me approach in meeting the requirements, since vendors may need to disclose and prove in much more basic terms how they are meeting the specifications.

As an introduction to such an approach, we present a set of 16 strict voting system requirements establishing performance requirements. These 16 requirements are the result of extensive public feedback and are, themselves, based on the following design rules:

- Technologically neutral: election technology changes but election requirements need to remain constant
- Should be applicable to paper, electronic and network (Internet, dial-up) voting
- Need to be consistent
- Based on clear definitions.
- Need to exceed the current requirements for paper-based ballots and DRE machines
- Use basic principles of Information Theory and of trust as qualified reliance on information
- Favor multiple, independent channels of information over one purportedly strong channel
- Must present no single point of failure

REFERENCES:
http://www.vote.caltech.edu/wote01/pdfs/gerck.pdf
http://www.vote.caltech.edu/wote01/pdfs/gerck-sysreqs.pdf
http://www.vote.caltech.edu/wote01/pdfs/gerck-witness.pdf

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Sincerely,

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